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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,361	12/29/2000	Roland M. Morley	5038-49	9715

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EXAMINER

GUHARAY, KARABI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,361

Applicant(s)

MORLEY ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-19 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 5. 6) ☐ Other: .

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Mesquida (US 4703219).

Regarding claim 1, Mesquida discloses a light directing apparatus (Fig 1 & Fig 7) comprising a light emitting layer including an array of light emitting elements (21-24, or 41-43) and a light directing layer (91-94 or 31-32) adjacent to the light emitting layer, the light directing layer including an array of light directing elements (lens) in substantial registry with the array of light emitting elements (lines 36-39 of column 4).

Regarding claim 2, Mesquida discloses that the light directing elements include a plurality of cylindrical lens (Fig 2, & Fig 7).

Regarding claim 3, Mesquida discloses that the each of the lens (91-94) is spaced from a respective light-emitting element (21-24) from about 1 to 3 times the distance between respective light emitting element and an adjacent light emitting element (Fig 2).

Claims 1-2, 11-13, 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nomura et al. (US 5493427).

Regarding claim 1, Nomura et al. disclose a light directing apparatus (Fig 6) comprising a light emitting layer including an array of light emitting elements (Gn2, Gn1, Gi1, Gi2, G12, G 11, pixel elements of liquid crystal panel) and a light directing layer (lenslet structure L1-Ln) adjacent to the light emitting layer, the light directing layer including an array of light directing elements (lenses L1-Ln) in substantial registry with the array of light emitting elements (pixels).

Regarding claim 2, Nomura et al. disclose that the light directing elements includes a plurality of cylindrical lens (Fig 6).

Regarding claim 11, Nomura et al. disclose that centers of the light directing elements are offset from centers of the light emitting elements (see Fig 6).

Regarding claim 12, Nomura et al. disclose that a distance between centers of adjacent light directing elements are different from a distance between centers of adjacent light emitting elements (Fig 6).

Regarding claim 13, Nomura et al. disclose that the distance between centers of adjacent light directing elements is less than the distance between centers of adjacent light emitting elements (Fig 6, lines 43-55 of column 1).

Regarding claim 18-19, Nomura et al. disclose a method for directing light from a display incorporating a plurality of light emitting pixel elements (Gi1, Gi2, Gn1, Gn2 of Fig 6) directing light from a first of the plurality of light emitting pixel

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(Gn1, Gn2) elements through a first light directing element (Ln) and directing light from a second of the plurality of light emitting (G12, G11) pixel elements through a second light directing element (L1), where directing the light from the first light directing element in a first preferential direction and directing the light from the second light directing element in a second preferential direction different from the first preferential direction (Fig 6).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, & 4-6 are rejected under 35 U.S.C.102(e) as being anticipated by Koike et al. (US 6345903).

Regarding claim 1, Koike et al. disclose a light directing apparatus (Fig 22) comprising a light emitting layer including an array of light emitting elements (15 shown in Fig 7) and a light directing layer (30 of Fig 22) adjacent to the light emitting layer, the light directing layer including an array of light directing elements (lenses 28) in substantial registry with the array of light emitting elements.

Regarding claim 2, Koike discloses that the light directing elements includes a plurality of cylindrical lens (Fig 22).

Regarding claims 4-5, Koike discloses means for indexing light emitting layer relative to the light-directing layer (30) where the means for indexing

including complimentary molded features (39, 30c) on the light emitting layer and the light directing layer adapted to align the light emitting layer with the light directing layer. See Fig 22 & Fig 20.

Regarding claim 6, Koike discloses that the light emitting elements (15) are arranged along a substrate 12 to form a plurality of strips and the light directing elements 28 are cylindrical lenses, each of the lenses having a long axis parallel to a respective stripe (see Fig 5).

Claim 14 is rejected under 35 U.S.C.102(e) as being anticipated by Myers (US 6330111).

Regarding claim 14, Myers discloses a light directing apparatus (Fig 4B) comprising an LED array having RGB light emitting diode structures or light emitting pixel element (12) arrayed longitudinally along a substrate 10 to form a plurality of RGB triplet groups and a lenslet array having a plurality of lenslet structures (13), each one of the lenslet structures positioned adjacent a respective one of the RGB triplet groups, said lenslet structures including for each respective RGB triplet group a plurality of cylindrical lenses indexed to said respective RGB triplet group, said cylindrical lenses being longitudinally arrayed in parallel to said RGB light emitting diode structures (Fig 4B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C.103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious

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at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C.103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C.103(c) and potential 35 U.S.C.102(e), (f) or (g) prior art under 35 U.S.C.103(a).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mesquida as applied to claim 1 above, and further in view of Matthies et al. (US 6476783).

Regarding claim 7, Mesquida discloses all the limitations of claim 7 except for a contrast-enhancing coating formed within inactive regions of the light directing apparatus. However, Matthies et al. disclose a light directing apparatus (see Fig 19) where area between the lenses on the viewer surface of the display (inactive regions) coated with a back material in order to enhance contrast for the display (see Abstract).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have black coating in an inactive region of the light directing apparatus, as disclosed by Matthies et al., since this will enhance the contrast of the display.

Claims 8-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Mesquida as applied to claim 1 above, and further in view of Ishihara et al. (US 6535256).

Referring to claims 8-9, Mesquita discloses all the claimed limitations except for an integration plate adjacent to the light directing layer and an optical adhesive between the integration plate and the light-directing layer.

However, Ishihara et al. discloses a light directing apparatus where there is an integration plate (8c of Fig 4) adjacent to the light directed layer (lens array 8a) having an optical adhesive layer 8b between them (lines 61-67 of column 5), and further teaches that this arrangement avoids loss of light, thus enhances the brightness of the image.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a integration plate attached to the lens array of Mesquita with an optical adhesive as disclosed by Ishihara et al. since this will reduce loss of light and increase the brightness of the image.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers as applied to claim 14 above, and further in view of Nomura et al.(US 5493427).

Regarding claims 15-16 Myers disclose all the limitations of claims 15-16, except for each of said lenslet structures is offset from each of the respective RGB triplet groups by an identical amount and wherein a first of the lenslet structures is offset from a first respective light emitting elements by an amount that is different than an offset between a second of the lenslet structure and the second respective one of the other group of light elements.

However, Nomura et al. disclose a light directing apparatus having light emitting pixels and lenslet structure offset with corresponding pixel elements wherein offset by same amount (see Fig 5) or offset from a first group of pixel elements by an amount different than an offset between a second lenslet structure and respective second pixel elements (Fig 4) in order to display stereoscopic image without spectacles.

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide lenslet with respect to light emitting elements as disclosed by Nomura et al. in the device of Myers in order to provide a stereoscopic display.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myers as applied to claim 14 above, and further in view of Matthies et al. (US 6476783).

Regarding claim 17, Myers discloses all the limitations of claim 17 except for a contrast-enhancing coating formed within inactive regions of the light directing apparatus. However, Matthies et al. disclose a light directing apparatus (see Fig 19) where area between the lenses on the viewer surface of the display (inactive regions) coated with a black material in order to enhance contrast for the display (see Abstract).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have black coating in an inactive region of the

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light directing apparatus, as disclosed by Matthies et al., since this will enhance the contrast of the display.

Allowable Subject Matter

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable over the prior art of record if rewritten in independent form including all the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither shows nor suggests a light directing apparatus including all the claimed limitations of claim 10, particularly the limitation of optical adhesive has an index of refraction falls between an index of refraction of the light directing layer and an index of refraction of the optical integration plate.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure : Ryan Jr. et al. (US 6244727); Watanabe et al. (US 5680186); Tutt et al. (US 6570324).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

R.G.
Karabi Guharay
Patent Examiner
Art Unit 2879

Ashok Patel
ASHOK PATEL
PRIMARY EXAMINER